G. SHEAR STRENGTH

THE PORT AUTHORITY OF NEW YORK & NEW JERSEY
MEMORANDUM

To: TSpero
From: PDunlop
Date: April 01,1996

Subject: Geotechnical Exploration and Testing Program for the 1996 Geotextile Demonstration Project -- Brooklyn Piers -- Material Shear Strength

CC: DCavaliere, NLudewig, RSandiford, ATrotto

The following summarizes the results of the large TORVANE (0.2 Factor) shear strength tests performed on April 01, 1996. Tests were performed by PDunlop at the PATC.

Boring Number	Torvane Reading	Shear Strength-PSF
B 730 & 731	0.10	40
	0.14	56
	0.12 (R=0.10)*	48 (40)*
	0.14 (R=0.12)*	56 (48)*
	0.13 (R=0.10)*	52 (40)*
B 732 & 733	0.11	44
	0.10	40
	0.095	38
	0.07 (R=0.06)*	28 (24)*
	0.10	40
	0.07 (R=0.05)*	28 (20)*
B 734,735&739	0.11 (R=0.085)*	44 (34)*
	0.10 (R=0.08)*	40 (32)*
	0.11 (R=0.09)*	44 (36)*
B 736,737&738	0.33	132
	0.175 (R=0.125)*	70 (50)*
	0.24 (R=0.14)*	96 (56)*
	0.20 (R=0.10)*	80 (40)*

* Remolded strength estimate

The last grouping for B 736, 737 and 738 may have higher shear strengths because B736 and B737 were drilled (Vibrocore) in the area nearest the head end of 9A South which may not have been dredged the last time (July 1994). The shear strengths toward the entrance of the pier channel decrease but are still higher than at the PST (estimated to be

about 5 to 10 PSF last year). One factor is that the shear strength tests at the PST were performed on the material that HAD BEEN dredged. The bulking factor at the PST was about 20 %. The PST shear strengths were lower because of this bulking. This correction can be estimated when the BMT index tests are completed but it appears that the shear strengths of the materials at the BMT will still be significantly higher than at the PST. Another factor contributing to this higher shear strength is that almost two years have elapsed since the last dredging at the BMT whereas the PST is dredged annually.

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